

动态称量信号离散小波变换数字滤波处理方法

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摘要: 针对动态称量快速准确的要求, 结合小波变换变分辨率的时频联合分析特点, 应用实时Mallat分解与重构去噪算法, 探讨了动态称量信号离散小波变换实时处理方法。定量加料动态称量实验表明: 小波分解去除高频信号后, 重构出的低频信号稳定时间约0.128 s, 相对误差为-1.5%~2%, 均优于快速傅里叶变换法。 Aimed at the requirement of quick and accurate dynamic weighing, combining the characteristic of digital filter about wavelet, applying fast Mallat decomposing and constructing algorithm, a new signal processing method of dynamic weighing by discrete wavelet transform was discussed. The results of quantitative feeding dynamic weighing show that the stable time of the constructed low frequency parts is 0.128 s after wavelet decomposing wiped off high frequency parts. The error of signal construction is -1.5%~2%. The signal processing of dynamic weighing by wavelet transform can reflect the actual weight of material more quickly and more exactly than that by the Fourier transform.

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